



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/052,746	01/18/2002	Alex Lobovsky	050-00-007	3263

7590 11/15/2004

Honeywell International, Inc.
Law Dept. AB2
P.O. Box 2245
Morristown, NJ 07962-9806

EXAMINER

COLE, ELIZABETH M

ART UNIT	PAPER NUMBER
----------	--------------

1771

DATE MAILED: 11/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/052,746

Applicant(s)

LOBOVSKY ET AL.

Examiner

Elizabeth M. Cole

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 and 26-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 and 26-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date 11/08/04.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/30/04 has been entered.
2. Claims 1-4, 722, 26-43, 45 rejected under 35 U.S.C. 103(a) as being unpatentable over Largman, U.S. Patent No. 5,057,368 in view of McGregor et al, U.S. Patent No. 5,571,592. Largman discloses a fibrous insulation material comprising a plurality of fibers having a non-circular cross section comprising a plurality of lobes. Largman teaches that such fibers produce superior insulation because of their high loft and reduced tendency to pack. See col. 3, lines 43-57. The fibers may be formed from a variety of polymers, including those claimed. See col. 5, line 40 – col. 8, line 22. The fibers of Largman may comprise T-shaped lobes wherein each lobe comprises a leg and a cap defining at least one intra-fiber void. Measuring the distance between the adjacent caps from the two innermost end points, the diameter of the void is larger than the distance between the adjacent caps. See figs 1 and 2. The fibers may be formed by spinning. See col. 5, lines 40-46. Largman differs from the claimed invention because Largman does not disclose incorporating a plurality of expandable microspheres into the fibrous material. McGregor et al teaches that incorporating expandable microspheres into a fibrous insulation material and then expanding the microspheres such that the microspheres are retained in place enhances the insulating

properties of the insulation due to the improvement in the loft of the insulation. See abstract. McGregor teaches that the microspheres may have a variety of shapes including tubes, ellipsoids, cubes, particles, and other such shapes. See col. 6, lines 9-11. McGregor teaches that the microspheres may be applied onto fibrous insulation through the use of air. See col. 5, lines 16-25. McGregor teaches that EXPANCEL microspheres may be used, which correspond to the claimed microspheres. See col. 4, line 53 – col. 5, line 7 of McGregor as well as page 11, paragraph 028 of the instant application. With regard to claim 43, while the references do not teach concurrently spinning the fibers and applying the microspheres, it is noted that it has been held that a continuous operation of a process is obvious in light of a batch process set forth in the prior art. *In re Dilnot*, 319 F.2d 188, 138 USPQ 248 (CCPA 1963). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have performed the various steps of the process continuously. It would have been obvious to have incorporated the expandable microspheres into the insulation of Largman et al. One of ordinary skill in the art would have been motivated to incorporate the expandable microspheres into the insulation of Largman, motivated by the expectation that this would further enhance the insulation properties of the insulation by improving the loft of the insulation. Since McGregor teaches that the microspheres should be expanded to a size which fixes them in place, it would have been obvious to have expanded the microspheres so that they were held between and within the voids.

3. Claims 5-6, 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Largman in view of McGregor as applied to claims above, and further in view of

Huey et al, U.S. Patent No. 4,636,234. Largman does not disclose employing mineral fibers such as a glass to make the shaped fiber insulation. Huey et al discloses that mineral fibers such as glass may be formed into shaped fibers and used to form insulation. See col. 1, line 12 and the figures. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed shaped fibers formed from mineral fibers such as glass in the insulation material of McGregor. One of ordinary skill in the art would have been motivated to employ the mineral fibers by the teaching of Huey that such fibers have particular use as insulation materials.

4. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Largman in view of McGregor as applied to claims above, and further in view of Graham, U.S. Patent No. 6,332,234. Neither Largman nor McGregor teach the step of electrostatically charging the fibers. Graham teaches that fibers are more easily collected by electrostatically charged fibers. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed electrostatically charged fibers when forming the insulation material of McGregor, motivated by the expectation that this would enhance the adhesion of the particles to the fibers, especially before the particles were expanded.

5. Claims 12, 13, 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Largman over McGregor as applied to claims above and further in view of Dalton et al, U.S. Patent No. 5,753,166. Although Largman teaches employing shaped fibers comprising lobes, Largman does not disclose the claimed shape factor. Dalton et al

teaches at col. 4, line 60 and col. 6, lines 57-60, that fibers having a shape factor up to 4 are suitable for use in insulation products. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed fibers having shape factors up to 4 in the insulation of Largman. One of ordinary skill in the art would have been motivated to employ fibers having a shape factor up to 4 in the insulation of Largman because Dalton teaches that a high shape factor correlates with good shape retention of the fibers. See col. 3, lines 39-40.

6. Applicant's arguments filed 8/30/04 have been fully considered but they are not persuasive. Applicant argues that Largman does not teach combining the fibers with another material and therefore does not teach a composite material. However, the motivation to combine the fibers with the microspheres of McGregor is found in the fact that both references relate to insulation materials. Applicant argues that employing the microspheres would destroy the filtering and wicking properties of Largman. However, Largman also discloses insulation materials. Therefore, combining the references would not destroy the Largman material. Applicant argues that the microspheres in McGregor are external to the fibers. However, McGregor teaches expanding the microspheres so that they are held between the fibers without the use of binders, etc. Largman teaches employing shaped fibers which comprise lobes or legs. Combining the teachings of Largman and McGregor would result in a product wherein the microspheres were held within the lobes of the fibers as well as between the different fibers since the purpose of the microspheres is to provide an insulation material with the most loft and separation. Applicant argues that McGregor teaches away from the

Art Unit: 1771

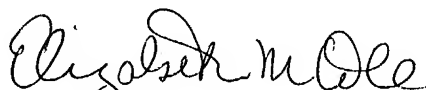
claimed invention because it teaches that virtually any form of existing insulation material could be used. However, it is not clear how this would constitute teaching away from the claimed invention since the insulation material of Largman was one type of existing insulation material at the time of the McGregor invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth M. Cole whose telephone number is (571) 272-1475. The examiner may be reached between 6:30 AM and 6:00 PM Monday through Wednesday, and 6:30 AM and 2 PM on Thursday.

Mr. Terrel Morris, the examiner's supervisor, may be reached at (571) 272-1478.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

The fax number for all official faxes is (703) 872-9306.



Elizabeth M. Cole
Primary Examiner
Art Unit 1771

e.m.c